

The Role of Advocacy in Competition Policy

The Case of the Argentine Gasoline Market

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Abstract

In 2000 the Argentine antitrust authorities conducted a study of the state of competition in the gasoline market. The study concludes with a set of policy recommendations (that is, limits to vertical integration and to the duration of contracts between oil companies and gasoline stations) which were subsequently implemented by the Argentine government. This was one of the rare occasions where the Argentine antitrust

authorities exercised its advocacy role in a country that underwent an extensive process of deregulation and privatization. Serebrisky assesses the design and impact of the policies recommended by the Argentine antitrust authorities. In particular, he evaluates under which circumstances the new policies can reduce barriers to entry and foster competition in the Argentine gasoline market.

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The Role of Advocacy in Competition Policy. The Case of the Argentine Gasoline Market.

Tomás Serebrisky¹

After decades of imposing several types of regulations, the Argentine government deregulated the gasoline market in 1991. Once the restructuring and privatization of Yacimientos Petrolíferos Fiscales (YPF) –the formerly state-owned petroleum company and the largest firm in Argentina- was completed in 1993, the law established that the government should reduce its role exclusively to the enforcement of industry-specific environmental laws. Since 1997, following a sharp decline in crude oil prices, there have been complaints that the deregulation of the Argentine gasoline market was not successful because the level of gasoline prices –net of taxes- is too high and they do not adjust to changes in crude oil prices, especially when crude oil prices fall. As an example, from January 1997 to October 1998, the crude oil price fell 55.4% while the net price of premium gasoline fell only 7.4%. For the same change in crude oil prices, the net price of premium gasoline in the United States fell 19.8%².

¹ World Bank Institute, tserebrisky@worldbank.org. The findings, interpretations and conclusions expressed in this paper are entirely those of the author. I would like to thank Antonio Estache, Lucas Grosman, Diego Margot, Pablo Mercuri and Pablo Presso for their comments and suggestions.

² Mercuri (2001) presents a detailed study of price asymmetries in the Argentine gasoline market, and Serebrisky (2000) shows the evolution of prices in Argentina and the United States.

The behavior of prices in the Argentine gasoline market motivated academic research aimed at determining the intensity of competition in this market. The conclusions of the papers written about this topic are contradictory. Aspiazu (1995) argues that the observed differences in levels and adjustment patterns of gasoline prices between Argentina and the United States (which is used as a benchmark for a competitive market) is a consequence of an oligopoly operating under collusion. On the contrary, FIEL (1999) and Coloma (1997) do not find any evidence of the existence of an implicit agreement. Serebrisky (2000) presents different econometric tests to evaluate the hypothesis of tacit collusion, finding no conclusive evidence of this type of behavior. But he agrees with a study the Argentine Antitrust Commission did in 1998 and concludes saying that “after almost a decade of deregulation, price competition in the gasoline market is less intense than what the Argentine government expected to be”.

In 2000, the newly created Secretariat of Consumer Affairs and Defense of Competition (SDCyC), elaborated a report³ of the gasoline market which recommended the adoption of specific policies to increase the competition in this market. The most important policy recommendations were: (a) limit the duration of contracts between oil companies and dealers that operate gasoline stations and (b) establish a ceiling to vertical integration, measured in a percentage of the network of gasoline stations that an oil company can own and operate.

The Argentine president, following this report, issued a decree that implemented new policies in the gasoline market. This decree is one of the few examples of successful advocacy achieved by the Argentine SDCyC. In Latin American countries it is not common for competition agencies to act on their own initiative and ask governments to adopt pro-competitive policies. In general, they limit their role to merger requests or to solve accusations of anticompetitive conducts. However as explained in a recent survey (International Competition Network, 2002), competition agencies are increasing their advocacy role to promote market structures more supportive of intense competition. Advocacy allows a competition agency to expand its reach and play an important role in areas where its role is usually ignored. In particular, advocacy can give a competition

³ <http://www.minproduccion.gov.ar/secdef/basehome/mercadodecombustibles.pdf>

agency a word in the design of restructuring of industries before privatization or deregulation, in the concession or licensing processes and in the way access rules are set.

In Argentina, the competition agency could not prove that oil firms engaged in any anticompetitive conduct. Therefore, it could not use the instruments the antitrust law has –sale of assets, open access to essential facilities- to modify behavior and market structure. However, the fact that oil firms were not colluding or did not engage in any other type of anticompetitive conduct did not bar the antitrust authority to use its advocacy power by evaluating the state of competition in the market and asking the government to adopt policies to stimulate more competition.

In this paper we present the evidence that supported the policy recommendations and critically assess their foundation and the impact they have had in the oil industry. In particular we evaluate the ability of the policies adopted in Argentina to modify the market structure and incentive a more aggressive price competition.

This paper is organized as follows. Section 1 presents the state of the Argentine gasoline market before and after its deregulation⁴. Section 2 explains the relation between gasoline prices, import parity and competition. Section 3 elaborates on the consequence that YPF's privatization model had on the intensity of competition in the Argentine gasoline market and Section 4 emphasizes the impact that the absence of independent refineries and a developed wholesale market have on the intensity of competition in the Argentine gasoline market. Section 5 describes how the SDCyC identified the exclusive contracts between oil companies and gasoline stations as a significant barrier to entry. Section 6 and 7 describe and evaluate the policy recommendations. Finally, section 8 concludes.

1. The Argentine Gasoline Market

Until 1991, the evolution of the Argentine gasoline market was characterized by the belief that petroleum was a strategic resource. This belief justified a significant government intervention that was direct, through the control of the largest firm in the oil

⁴ This paper does not explain the effects that the major devaluation of the Argentine peso in 2002 had on the gasoline market (i.e. quantity demanded, changes in sector taxes, subsidies implemented by the national government).

industry –YPF- and indirect via the regulatory framework. Before its privatization, YPF controlled 63% of the refining capacity, while Esso and Shell, the other two large firms in the market, accounted for a combined 32% of the total refining capacity. The government determined domestic oil prices, wholesale and retail gasoline prices, retail margins and taxes.

The law guaranteed that regulated prices should allow firms to cover production costs and obtain a reasonable return. But in reality, the government did not apply this law. Given that gasoline is an important determinant of the price index, whenever there was a new stabilization plan, gasoline prices were used as an “anchor”. The consequent reduction in margins forced oil firms to be permanently involved in negotiations with the sector authorities.

Not only the domestic commercialization was regulated. Imports of crude oil and gasoline were authorized only when there was a shortage in domestic production. There were almost no exports of crude oil or refined products during the period prior to deregulation due to inefficiencies in exploration, extraction and refining of crude oil.

The government decided where gasoline stations should be located. A license was provided to the refinery and not to the owner of a gasoline station, implying that a gasoline station had to buy gasoline exclusively from the refinery that owned the license. To avoid hold up problems, gasoline station’s margins were also regulated. The criterion by which new gasoline stations were allowed to open was not clear but one of the rules closely followed was that they should not compete among themselves. The condition of local monopolies and regulated prices gave no incentives to provide adequate services to the consumer. Moreover, the inefficient government controls induced retail outlet operators to cheat adulterating gasoline.

In January of 1991 the Argentine gasoline market was deregulated. Restrictions on prices, refining capacity, location and quantity of retail outlets were eliminated. YPF was privatized in 1993, but a new management began a radical transformation process in 1991 aimed at increasing productivity. Labor productivity increased significantly as total personnel decreased from fifty two thousand in 1990 to six thousand in 1994 while total sales increased from 3.5 to 4.4 billion dollars during the same period.

A comprehensive analysis of competition in gasoline markets has to consider the state of competition in each of the production and commercialization stages, from extraction of crude oil to retail distribution of gasoline. In Argentina, there is consensus (Montamat et al. 1999) that the upstream segment of the market (exploration, extraction and commercialization of crude oil) is competitive. The deregulation of the oil market and the privatization of YPF allowed Argentina to become an exporter of crude oil, although it has a very small share of the world trade. Refining firms that are not integrated backwards (do not extract oil) can buy crude oil from more than ten international firms that extract oil in Argentina. Due to the nonexistence of legal (tariffs or quotas) or logistic (for instance, storage facilities) barriers to trade, refining firms can buy crude oil from suppliers in other regions of the world. The existence of freedom to trade implies that domestic oil producers can not extract any economic rent⁵. In other words, given that crude oil producers can not exercise market power, we can argue that this market is competitive.

Seeing that there are no competition concerns in the upstream stage of the market, the study of the state of competition has to focus in the downstream stage of the market, that is, the refining, wholesale and retail distribution of gasoline.

In Argentina, four firms account for more than 85% of the gasoline market. RepsolYPF⁶ is the largest of them, and in 1999 the Spanish firm Repsol bought the majority stake. This firm is present in all regions of Argentina. It has the two largest refineries and co-owns with Perez Companc, a domestic firm⁷, the only refinery in the north, adding up to more than 50% of the refining capacity in the country. Esso (owned by Exxon) and Shell have been in Argentina for more than fifty years and each of them has only one refinery, which are located close to Buenos Aires. Their combined share of the refining capacity is 32%. EG3 is the result of a merger, in 1995, of three small domestic oil firms. This firm, that was acquired by Repsol in 1996 and later –in 2000–

⁵ In fact, domestic oil producers can sell in Argentina at a price slightly inferior to the import parity. Thus, we can argue that transportation costs are a source of economic rent derived by location.

⁶ In this paper, the names YPF and RepsolYPF are used indistinctively. After Repsol bought YPF these companies merged and adopted RepsolYPF as the new company's name.

⁷ Petrobras made an offer to buy Perez Companc. This merger is pending the approval of the Argentine Antitrust Agency.

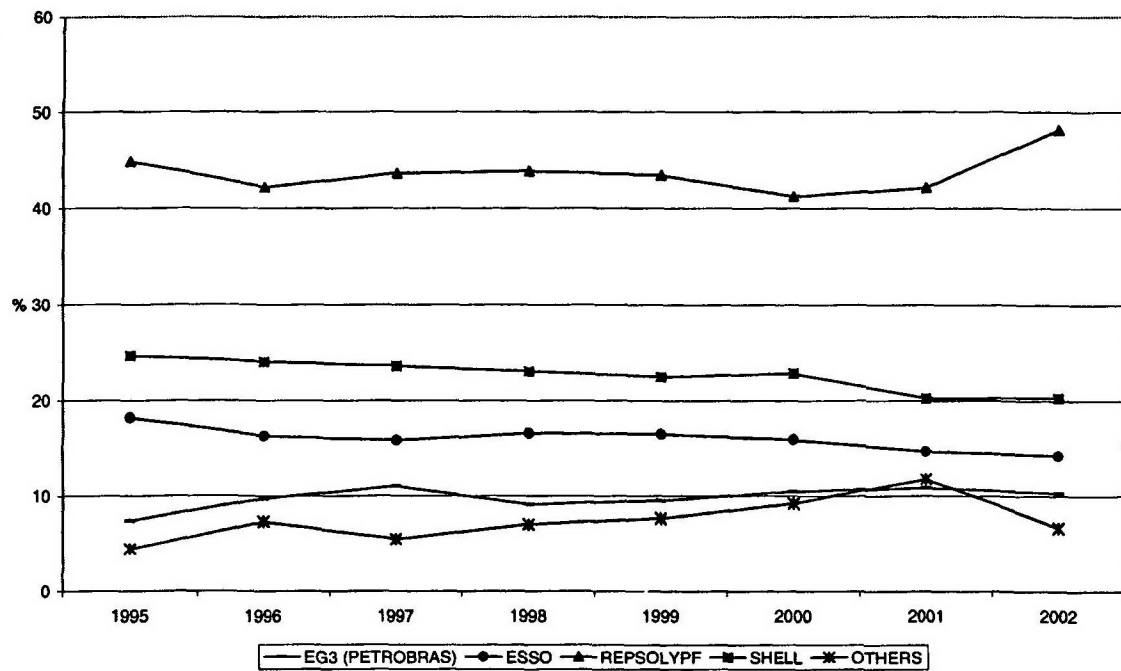
sold to Petrobras, the Brazilian state-owned oil firm has only one relatively small refinery (5% of total refining capacity in Argentina) 600km south of Buenos Aires.

Figure 1 presents the evolution of market shares for premium⁸ gasoline of the largest four firms and a category “other” that aggregates both small branded firms (Sol Petróleo, Refinor, Rhasa) and unbranded retail outlets. It is important to highlight that the SDCyC policy recommendations were made in 2000. Up to that year⁹ market shares were remarkably stable, with the only exception of the “other” firms that doubled their market share from 5 to 10%. The growth in market shares of the latter group has been accompanied by an impressive growth in retail outlets. Table 1 shows the evolution of retail gasoline outlets in Argentina. The biggest change in the quantity of retail outlets since deregulation is the fall in the quantity operating under the RepsolYPF flag, matched by an almost equivalent increase in the quantity of unbranded outlets. Looking at figure 1 and table 1, it should come as a surprise the increase in RepsolYPF’s market share during 2002 and the parallel fall in the market share of “others”. As we explain in the Policy evaluation section this change was caused by the devaluation of the Argentine currency that has made the new policies adopted for this market very difficult to evaluate.

⁸ The Secretariat of Energy established that premium gasoline has to have more than 93 RON while regular gasoline can have between 83 and 93 RON. In Argentina the ratio of premium to regular gasoline consumption is more than 2.

⁹ 1995 is the first year with reliable information. From 1991 to 1994 there are no comprehensive price and quantity time series data.

Figure 1
Market Shares Premium Gasoline (Country level)



Source: Secretariat of Energy, Argentina

TABLE 1: Evolution of retail outlets

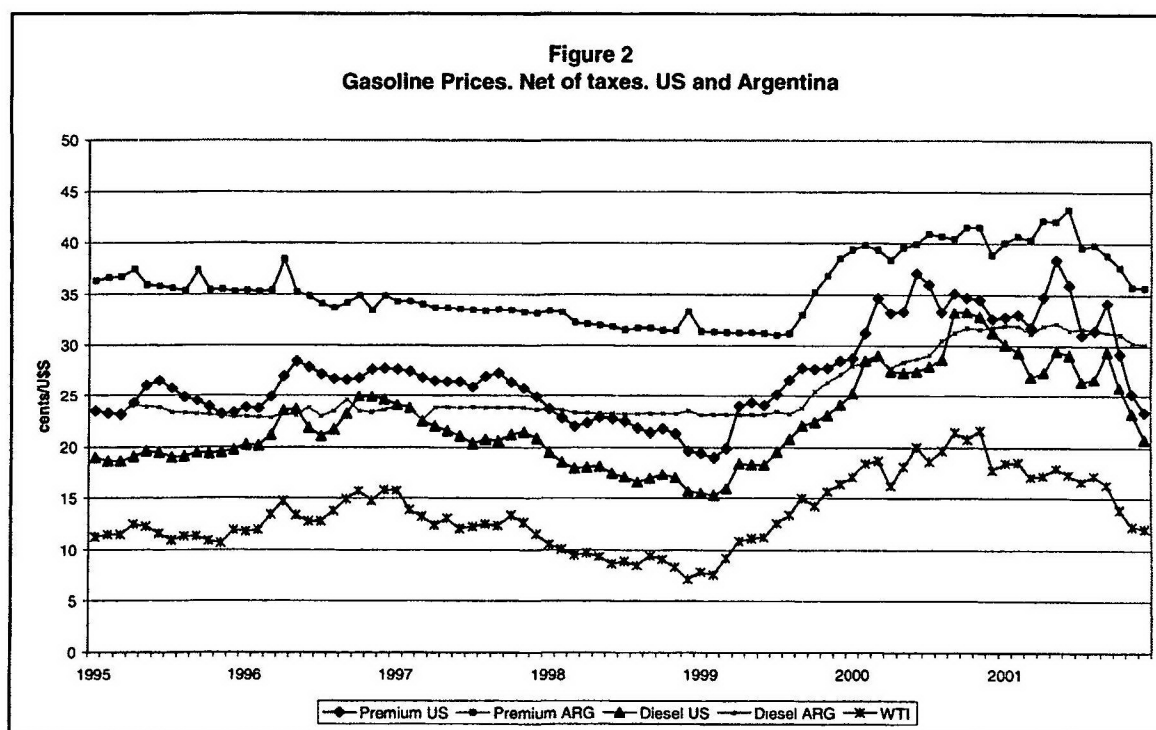
	1990		1994		1998		2001	
	Count	% Total	Count	% Total	Count	% Total	Count	% Total
RepsolYpf	2909	54.78	2753	51.70	2537	40.49	1955	31.08
Esso	947	17.83	1003	18.84	976	15.58	1145	18.20
Shell	952	17.93	933	17.52	1068	17.04	849	13.50
Eg3	502	9.45	565	10.61	622	9.93	668	10.62
Sol	0	0	23	0.43	146	2.33	254	4.04
Rhasa	0	0	N.D	N.D	54	0.86	146	2.32
Refinor	0	0	N.D	N.D	42	0.67	57	0.91
San Lorenzo	0	0	N.D	N.D	46	0.73	62	0.99
Unbranded	0	0	48	0.90	775	12.37	1155	18.36
TOTAL	5310		5325		6266		6291	

Source: Secretariat of Energy, Argentina

ND: No data available

2. The evolution of prices and their relation with the import parity

In the preceding paragraphs we described the evolution of market shares and retail outlets. In general, most of the complaints about competition in the Argentine gasoline market rely on the evolution of prices. It is apparent from figure 2 that gasoline prices in Argentina have a very different adjustment pattern to changes in crude oil prices than in the United States.



Source: Secretariat of Energy, Argentina. Energy Information Administration, U.S

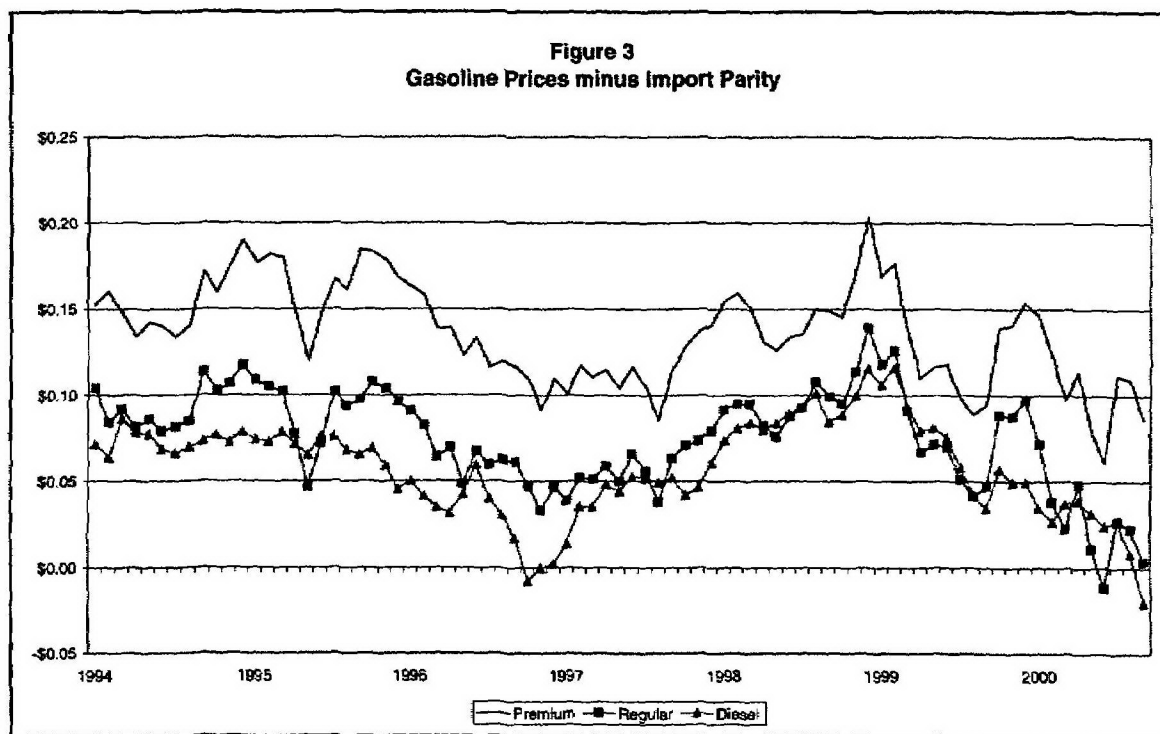
In the United States fluctuations in crude oil prices¹⁰ are reflected –with a lag– in gasoline prices. Besides, prices of all types of gasoline, -diesel, regular (not shown in the figure) and premium- tend to move in the same direction. This price setting process is strikingly different in Argentina where diesel, premium and regular gasoline prices do not move in a parallel way. In Argentina, it is evident from figure 2 that gasoline prices do not closely respond to changes in crude oil prices. It is remarkable the stability of diesel prices from 1995 to 2000, a period characterized by significant upward and downward

¹⁰ The West Texas Intermediate is considered in this paper as the international price of crude oil.

fluctuations in crude oil prices, that reached more than 40%¹¹. A market where prices do not react to changes in its most important cost variable can not be defined as competitive.

An appropriate proxy to study the intensity of competition in a gasoline market is the relation between gasoline prices and the import parity (the cost of imported gasoline ready to be sold in the domestic market, including the import price, transportation and finance costs). In a homogeneous good competitive market, assuming there is no barrier to entry, if we calculate the variable “Price *minus* Import Parity” the result should be zero. In this case, domestic firms will not be able to increase the price because imports will enter the domestic market as soon as the domestic price is higher than the cost of importing the product. However, if the good is differentiated (for instance by brand or location) the variable ““Price *minus* Import Parity” would be strictly positive. If it is calculated for a period of time, it should be positive and constant unless the differentiation component changes over time.

¹¹ It is important to highlight that during this period, crude oil was the most important component of gasoline production costs. It accounted for about 35% of the retail price of gasoline in the United States (EIA, 2001).



Source: Secretariat of Energy, Argentina

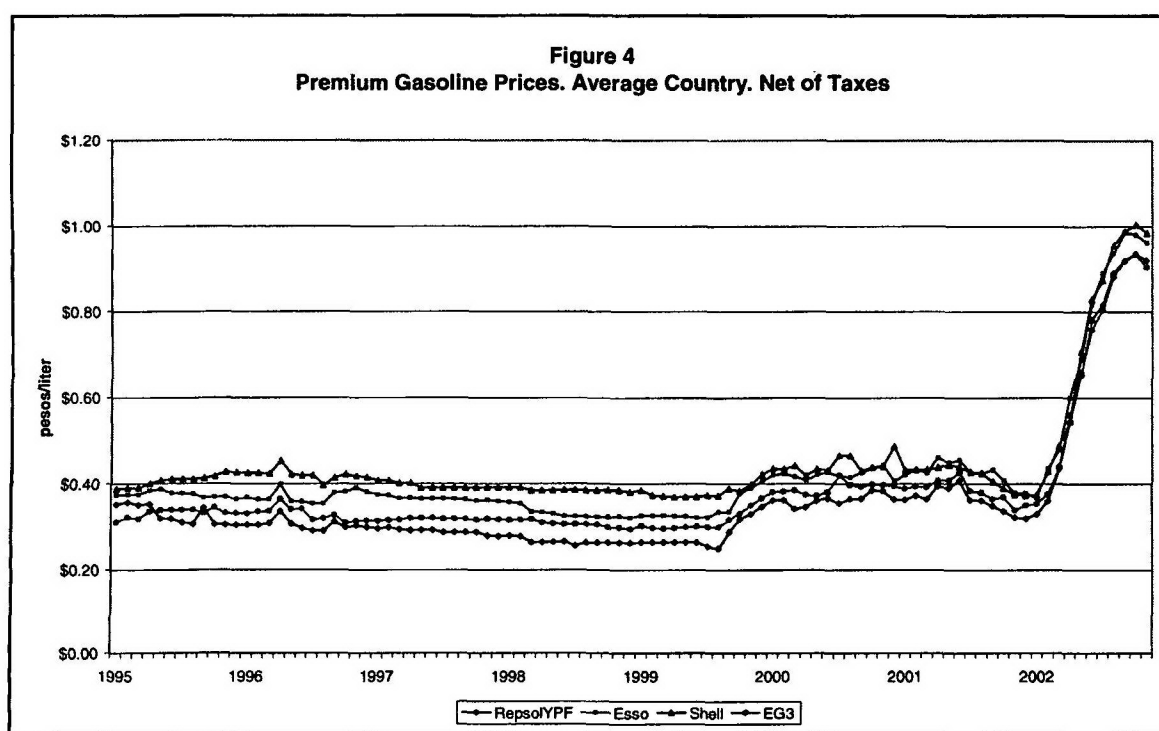
In Argentina, from 1994 to 2001, the variable “Price minus Import Parity” was positive for premium, regular and diesel gasoline¹². Oil companies argued that the difference between the domestic price and the import parity was a consequence of a “brand premium” that the Argentine consumer was willing to pay. Moreover, the existence of a brand premium is consistent with the existence of a competitive market (Argentine Chamber of Oil Industry, 2000). This argument could be valid if the behavior of the variable “Price – Import Parity” is constant over time or if it changes from time to time as new products are introduced or the average consumer changes her perception about the quality of a brand. From figure 3 it is unmistakable that the oil companies’ argument is not consistent with the data; the series “Price minus Import Parity” have huge fluctuations, explained by the rigidity of domestic prices relative to the movements in the price of crude oil¹³. Summarizing, the evidence suggests that oil companies in Argentina are not price takers and they seem to be isolated from changes in gasoline prices in other

¹² Except for two months for diesel and one month for regular gasoline. Gasoline prices are the average for the whole country and were provided by the Secretariat of Energy.

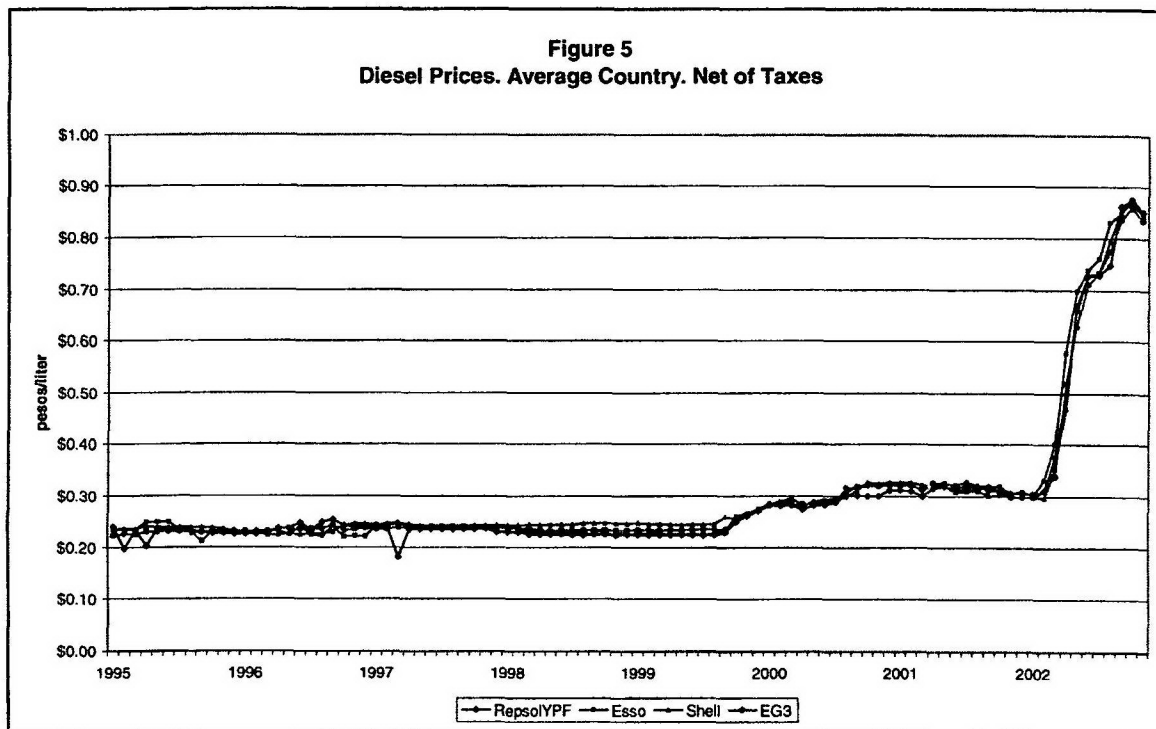
¹³ Changes in crude oil prices are fully reflected in the import parity.

regions, implying that imports are not able to effectively discipline Argentine gasoline prices.

To further analyze the intensity of competition in the Argentine gasoline market we must consider inter-brand price competition. The distribution of prices among brands is wider for premium gasoline (figures 4 and 5). The uniformity of diesel prices is a consequence of a more price-sensitive consumer, a higher volume of imports and a more developed wholesale market. Until 2002, when the peso suffered a significant devaluation that led to increases in gasoline prices, the ranking of prices had been hardly altered, another symptom of a market not characterized by intense price competition.



Source: Secretariat of Energy, Argentina



Source: Secretariat of Energy, Argentina

3. Privatization model and its impact on competition.

Governments have a wide variety of objectives when they embark in a privatization process. Reduction in fiscal deficits, benefits to users, improvements in infrastructure quality and capacity and a market structure that promotes competition are the most cited objectives (Estache, 2000). In the case of YPF, it could be argued that the government pursued fiscal as well as efficiency objectives. The privatization of YPF brought about a radical change to the Argentine oil sector. Before its privatization, YPF systematically lost money, needing transfers by the national government to continue its operations. Its privatization increased productivity and significantly improved efficiency in the exploration and extraction of crude oil, derivative products and natural gas.

However it is by no means clear that the government, when deciding how to privatize YPF, incorporated as a relevant concern the prospects of a competitive market structure. Or, on the contrary, it could be said that the government deliberately ignored the possibility of modifying the ex-ante market structure (before privatization) to promote a more competitive environment after the privatization.

There are two main reasons that justify the adoption of the privatization model followed by the Argentine government. First, the need to obtain fiscal resources. By selling a firm with a significant market share in a highly concentrated market, with control of key access infrastructure (ports, pipelines), the price that can be obtained in a public auction is much higher than the price that results from selling a much smaller firm that faces the prospects of a very competitive market. Second, in order to gain political support for the privatization, the government decided to privatize YPF following a “national champion” firm model with significant presence in the market, imposing limits to the percentage of stocks each private economic group could hold and keeping a golden share stock –that provided the government with veto power over strategic business decisions. In this way, YPF would keep being a “national pride”.

As in all complex privatization processes, the actual objectives are extremely difficult to identify. However, after six years of the privatization, and despite facing complaints about the intensity of competition in the gasoline market, the Argentine government decided to trade off its stake and golden share in YPF for fresh fiscal resources offered by Repsol. The government could have taken this opportunity to force YPF to sell some key assets and lay down the conditions to foster a more competitive gasoline market; instead, it preferred more fiscal resources.

As a general rule, governments should take advantage of the opportunity that a privatization or deregulation process provides to make structural changes in the industry, shaping a more competitive market structure. If they miss this opportunity, imposing structural remedies through the use of competition laws is extremely more difficult. The policy recommendations advocated by the SDCyC for the gasoline market were aimed at reducing strategic barriers to entry, hoping that more effective competition would prevail by new entry. Reshaping market structure by forcing disinvestments of key assets, although a desirable objective for the SDCyC, was an objective impossible to reach given the respect of firms’ property rights. The only way that the Argentine Antitrust Agency can force the disinvestments of assets is by proving that firms in the market (one, or a combination of them) implemented anticompetitive conducts. Although the Argentine Antitrust Commission analyzed many filings for anticompetitive conducts in the gasoline

market up to the moment the SDCyC released its policy recommendations, it could not prove that oil firms engaged in any anticompetitive conduct.

4. Independent refineries and wholesale market: market characteristics that make price competition more intense.

In Argentina, there are seven refineries¹⁴ that produce more than 90% of the gasoline consumed in the country. All of these refineries were constructed before the deregulation and are owned by the incumbent oil firms. Given the size of the Argentine gasoline market, the capacity utilization rate (never exceeding 80%¹⁵) and the significant sunk costs (Scherer, 1996) involved in the construction of refineries, no new refinery was expected to be built for some years after deregulation. In fact, more than eleven years after deregulation no new refinery was built, although oil firms invested to upgrade the quality and production capacity of existing refineries.

When privatizing YPF, the Argentine government had the opportunity to sell a refinery with significant capacity (La Plata or Luján de Cuyo) to an independent refinery (unbranded) or to a new entrant. What would have been the consequences of this option?. On the one hand, as mentioned in the previous section, it would have reduced the revenues obtained from the privatization of YPF and weakened its position as market leader. On the other hand, it would have reshaped the competitive scenario in the gasoline market. An unbranded refinery could have sustained the development of a wholesale gasoline market and the parallel emergence of jobbers, that is, wholesale agents that play a key role in competitive gasoline markets (Borenstein, 1996, 1997). The main role jobbers have in the American gasoline market –usually used as a benchmark for a competitive market- is to arbitrage between unbranded and branded refineries when feeding unbranded gasoline stations. The absence of jobbers or a well developed wholesale market has made the unbranded gasoline stations in Argentina too dependent on imports and on the willingness of the incumbent refining oil firms to sell them gasoline.

¹⁴ Luján de Cuyo (RepsolYPF), La Plata (RepsolYPF), Dock Sud (Shell), Campana (Esso), Bahía Blanca (EG3), Refinor (RepsolYPF, Pluspetrol and Perez Companc) and San Lorenzo (Perez Companc).

¹⁵ For sector specific statistics see <http://energia.mecon.gov.ar/>

The alternative of selling a refinery to a new entrant, preferably to a well-known oil company, would not have helped the development of a wholesale market. But it would have undoubtedly introduced more competition. A new entrant, with a well-known brand, and a smaller YPF, would have left a market structure with four firms having similar market shares (around 20-25%) and a smaller one –the three firms that in 1995 merged and formed EG3- with 10% of the market. This scenario is completely different from the one currently prevailing, where RepsolYPF is the market leader with a market share of 45%, followed by Shell and Esso (around 20-25%) and EG3 (10%).

The two restructuring alternatives the Argentine government had when privatizing YPF, sell a refinery to an “unbranded” independent firm or sell it to a well-known oil firm not present in the Argentine gasoline market, would have had a very different impact on the vertical organization of the industry, but not necessarily in the intensity of competition. Selling a refinery to an unbranded refinery implies a move towards a less vertically integrated market structure. The idea behind this option is that the best way to increase competition is to introduce, upstream, a non integrated firm allowing the emergence of a new distribution channel (a wholesale market selling to unbranded gasoline stations) to effectively compete with the vertically integrated incumbents. On the contrary, selling a refinery to a vertically integrated new entrant¹⁶ relies on the principle that there could be intense competition only if there are equally strong vertically integrated firms with similar resources and strengths.

A priori, neither of the two alternatives delivers a more competitive market outcome. In any case, none of them was adopted when the Argentine government privatized YPF. The consequence of the privatization model was a highly concentrated market structure, with an underdeveloped diesel wholesale market and an almost nonexistent regular and premium wholesale market (Montamat, 1999).

5. Contracts and barriers to entry

Faced with the evidence provided in the previous sections, the investigation conducted by the SDCyC focused on the retail segment of the gasoline market. Given

¹⁶ We assume the new entrant not only buys the refinery but also buys or builds a network of gasoline stations.

that the upstream sector of the market (production of crude oil) is competitive and that the government did not choose to promote a more competitive market structure in the refining and distribution stages when YPF was privatized, the SDCyC concentrated its study on the contractual relation between oil companies and retail outlets. In particular, the SDCyC investigated if oil companies were using the exclusive distribution contracts subscribed with gasoline stations as a strategic barrier to deter the entry of a new firm or the growth of a small incumbent.

There are different contractual agreements between oil companies and gasoline stations. They can be summarized as follows (Shepard, 1993):

COCO (Company Owned-Company Operated): the oil company owns the gasoline stations and the manager is employed by the oil company. The oil company maintains ownership of the gasoline until it is sold to the consumer and therefore has the right to set the retail price.

CODO (Company Owned – Dealer Operated): the land and the immobile capital are owned by the oil company. The manager is self-employed. The oil company sets the wholesale price and the manager has the right to set the retail price.

DOCO (Dealer Owned –Company Operated): the dealer is the owner of the land and the oil company rents the property. These arrangements are the least frequent in gasoline markets. Oil companies are willing to operate under this arrangement because the location of the gasoline station is important for commercial reasons.

DODO (Dealer Owned – Dealer Operated): this contractual arrangement varies between countries. In the United States, for instance, the oil company has no investment in the gasoline station and decision rights over service and retail price are allocated to the station owner. The only substantive constraints on manager behavior are with respect to product purity and labeling. In Argentina, oil companies usually¹⁷ provide investment capital (in the form of loans) to refurbish the gasoline station and they lend the pumps and other equipment for the duration of the contract. To receive these loans, dealers must follow strict rules about the appearance of the retail outlets.

¹⁷ According to the Secretariat of Energy (Resolution 25/00) oil companies gave loans (data until 2000) to approximately 25% of the retail stations operating under DODO: YPF (26%), Shell (20%), Esso (41%) and EG3 (26%).

In Argentina, DODO is the predominant contractual arrangement, with more than 85% of the branded gasoline stations operating under this arrangement while close to 10% are COCO outlets. In the United States 65% of the gasoline stations operate under COCO and CODO arrangements (being CODO much more common than COCO). Almost all the remaining 35% operate as DODO. Europe has a different distribution of contractual arrangements: 35% operate as COCO and just over 50% as DODO¹⁸.

Why the data about contractual arrangements vary so much among countries? The answer has to be found in a cost-benefit analysis done by oil firms in each market. When oil companies face no legal constraints to the choice of contractual arrangement (for instance restrictions to vertical integration or limits to the duration of contracts), the optimal distribution of contractual arrangements depends on the ability of the oil company to solve a principal-agent problem. The theory (Tirole, 1988) says that an oil company chooses contracts with strong incentives but less direct control when retail outlets characteristics make unobservable effort by downstream agents (managers) important. Oil companies should trade off incentive power for more direct control when observable effort is relatively more important. The empirical implication of this theory is that in Argentina it is more difficult for an oil company to control its employees and so it is cheaper to operate a network of retail outlets with the DODO arrangement. It could also be the case that in Argentina the relation manager-customer has more weight when a consumer decides where to buy gasoline. In this country, a recurrent problem a consumer faces when buying gasoline is that gasoline could be adulterated. Thus, it is very important for the customer to trust the manager and this is more likely when the manager is the owner of the retail outlet because she bears the full cost of losing a customer.

The data clearly suggests that in Argentina the role played by the retail outlets operating under the DODO contractual arrangements is very important in the distribution network of oil companies. When an oil company decides how to allocate the contractual arrangements to maintain and expand its network, it not only takes into account the most efficient way to solve the principal-agent problem described in the previous paragraphs, it also incorporates in the decision-making process the competitive interaction in the

¹⁸ Sources: Secretariat of Energy, Argentina; Energy Information Administration, U.S; and RepsolYPF, Europe.

market. The location of each selling point and the effective control of the entire network are key determinants of the profitability of the downstream department of an oil company. The success of each location depends, in the short run, on the proximity and quality of competing brands' retail outlets, while in the long run it depends on the construction of new gasoline stations by existing or new competitors. If oil companies rely on the DODO arrangement, as they do in Argentina, to sell gasoline, they also have to consider the probability of losing a retail outlet to an existing or potential competitor once the contract that ties it to the gasoline station owner expires. When an oil company directly operates a gasoline station (under COCO or CODO), it does not have to be concerned about losing a retail outlet to the competition. Therefore, the importance of a gasoline station as a key competitive variable is significant.

If there are no restrictions to the duration of contracts between oil companies and gasoline stations and if it is relatively inexpensive to have an additional retail outlet operating under DODO, a retail outlet can be used as a strategic barrier to entry. A potential entrant to the market needs a distribution network with a minimum efficient scale large enough to be able to compete with the incumbents, especially if they have high market shares and their brands are well recognized. An entrant to a gasoline market has two options: build a network of gasoline stations or try to "steal" them from competitors. The latter option has clear advantages because the managers of gasoline stations already in operation have a clientele and market-specific experience in the area where the gasoline station is located.

An oil company, internalizing the competitive threat that competitors pose to the control of its network, may use the duration of contracts as a strategic competitive tool to deter entry. In other words, oil companies may extend the duration of contracts under DODO far beyond the optimal duration required to amortize any loan or any retail outlet-specific investment in order to deter entry. If all incumbent oil companies pursue this strategy simultaneously they could effectively be coordinating a strategy to deter entry and send a signal to soften price competition. A possible criticism to this argument is that signing a long term contract with an oil company is in the interest of the gasoline station owner; if not, the owner would bargain and sign a contract with a shorter duration or reject the offer and look for another oil company willing to sign with the conditions the

owner wants. It is fair to say that this criticism ignores the characteristics of a gasoline market, especially those prevailing in Argentina.

In general, the operation of a DODO gasoline station is done by a small firm and usually it is an activity that supports and employs a family. It is seldom the case that a single firm or person owns many gasoline stations. Therefore, it is clear that there are significant asymmetries in the bargaining power of an oil company and the owner of a gasoline station. Thus the likely outcome of contract negotiations is that the owner accepts the conditions imposed by the oil company. Only for those locations with high commercial value the oil company is willing to modify (and shorten) the duration of contracts. Another factor that reduces the bargaining power of the owner of a gasoline station in Argentina is that all the incumbent oil companies have a similar policy with respect to the duration of contracts. As a result, it is possible that a disagreement with the oil company gives a bad reputation to the owner and consequently the other oil companies refuse to deal with her. Moreover, oil companies have the financial capabilities to threaten the owner of a gasoline station to build another station closely located and provide it with better commercial conditions, forcing the owner into bankruptcy.

Summarizing, oil companies decide the optimal allocation of contractual arrangements by solving a principal-agent problem. The most efficient allocation of company-owned and dealer-owned gasoline stations in a network depends on the ability of oil companies to provide incentives and control the managers of gasoline stations. Besides the efficiency considerations, oil companies can use the network as a strategic barrier to entry, deterring potential competitors or hindering the growth of smaller competitors. Thus, oil companies will decide the size and contractual composition of the network of retail outlets taking into account an efficiency (cost minimizing) dimension as well as a strategic competitive dimension.

6. The study of the SDCyC and its policy recommendations

The objectives of the study conducted by the SDCyC were the identification of market characteristics that hinder the development of a competitive gasoline market and suggest policy recommendations.

As explained in the previous section, the SDCyC considered that the duration of contracts between oil companies and gasoline stations in Argentina could be a barrier to entry to the downstream stage of the gasoline market. This section describes the evidence that the SDCyC used to prove this hypothesis.

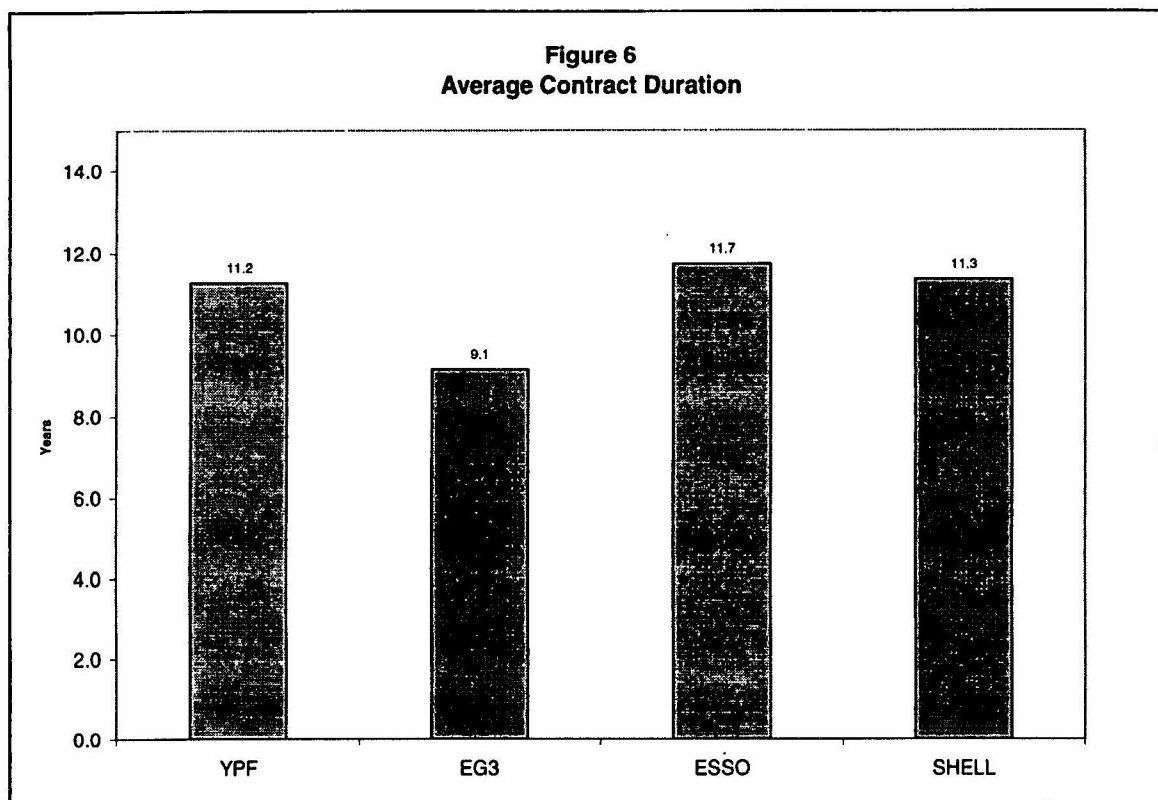
The SDCyC also identified other factors that do not support a competitive gasoline market, being the lack of a well developed wholesale gasoline market the most important. However, the SDCyC did not make any explicit policy recommendation to help the development of a wholesale gasoline market. The reason for the lack of policy recommendations for this stage of the market is that the SDCyC considered that the best policy –force RepsolYPF to sell one of its biggest refineries- was impossible to implement because it would constitute a violation of property rights that would require the Argentine government to provide RepsolYPF a significant amount of compensation funds¹⁹.

How has contract duration evolved since the deregulation of the Argentine gasoline market? To answer this question, the SDCyC analyzed a survey conducted by the Secretariat of Energy²⁰ during the first months of 2000. This survey covered more than 25% of the gasoline stations in the country and provided information about many characteristics of the contracts signed between oil companies and gasoline stations' owners.

Figure 6 shows the average duration of contracts that oil companies signed with gasoline stations after the gasoline market was deregulated. The contracts surveyed correspond to the DODO arrangement, that accounts for approximately 90% of branded gasoline stations. The largest firms, YPF, Esso and Shell have contracts with very similar average duration. Instead, EG3's portfolio of contracts has a shorter duration.

¹⁹ As explained in the section "Privatization model and its impact on competition", the Argentine government had the opportunity to sell one of YPF's biggest refineries during its privatization, but chose not to do it and pursue other objectives (for instance, maximize fiscal resources)

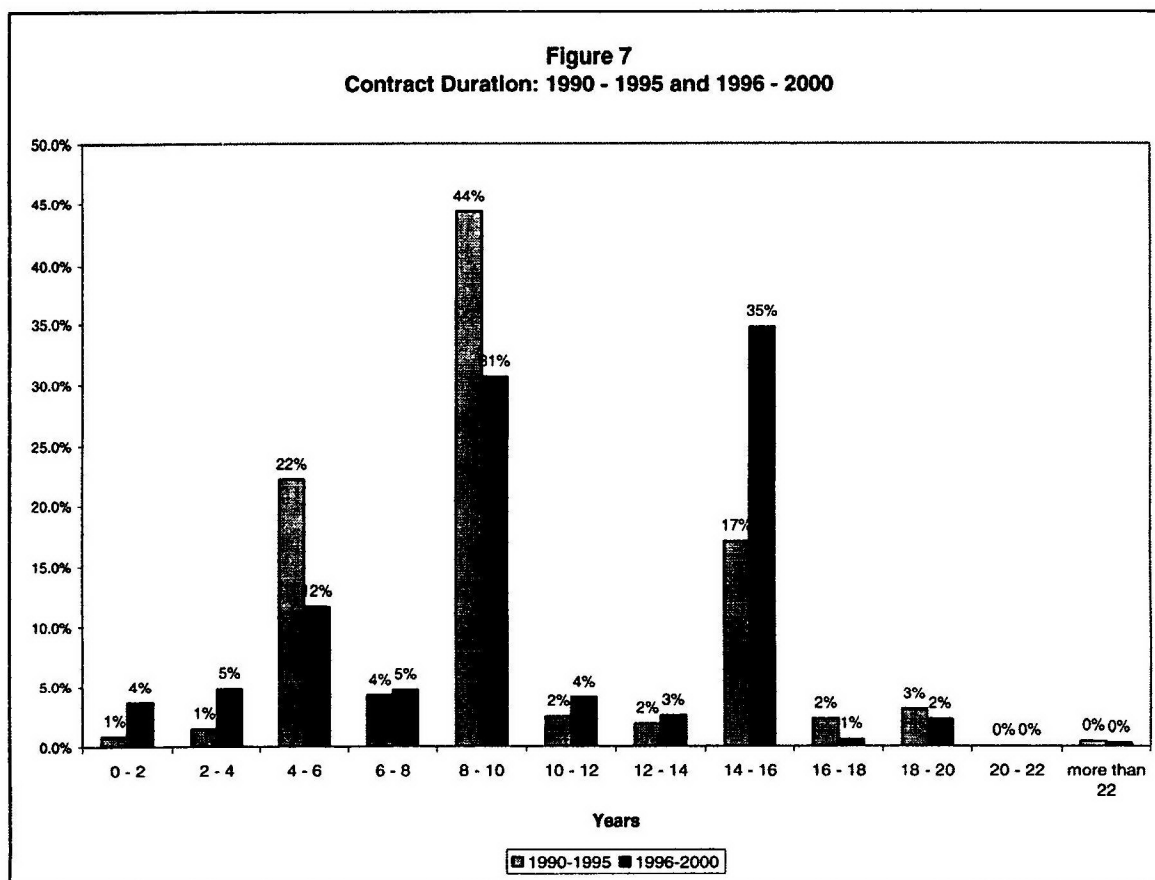
²⁰ Resolution 25/2000.



Source: Resolution 25/2000, Secretariat of Energy, Argentina

In order to analyze if the average duration of contracts increased since deregulation until 2000, the SDCyC divided the sample in two sub-periods, 1990-1995 and 1995-2000²¹. The distribution of contract duration in these periods can be seen in figure 7. It is clear that the distribution of contracts changed, being more skewed to the right the distribution of contracts signed between 1996 and 2000. For instance, 73% of the contracts signed between 1990 and 1995 had a duration of less than 10 years while only 55% of the contracts signed between 1996 and 2000 had the same duration. Besides, it is important to highlight the increase in the percentage of contracts with a duration between 14 and 16 years.

²¹ The total sample size is 1566. The sample for the sub-period 1990-1995 is 492 while the one for the sub-period 1996 – 2000 is 1074.



Source: Resolution 25/2000, Secretariat of Energy, Argentina

Recognizing that the increment in the duration of contracts between oil companies and gasoline stations in Argentina could be following a worldwide policy adopted by the multinational oil companies operating in this country (RepsolYPF, Exxon, Shell), the SDCyC studied the recent international experience in this area.

The SDCyC correctly focused the study of the international experience on Europe. Many markets in this continent share similar characteristics with the Argentine gasoline market, especially Spain, where the gasoline market was fully deregulated in 1998 and RepsolYPF has a significant market share (Contín, 1999).

In December of 1999, the European Commission issued a Resolution (2790/99/CE) that imposed new conditions for exclusive contracts. The direct implication of this resolution in the gasoline market is that contracts between oil companies and gasoline stations can not exceed five years. It is implicit in this Resolution the idea that

by limiting the duration of contracts the gasoline market can become more contestable. The European Commission considered that five years constituted a long enough period of time for an oil company to recover any gasoline station-specific investment.

In 1998 the Office of Fair Trading (OFT) conducted a study about the competition in the supply of petrol in the United Kingdom. In it, the OFT made no recommendation about the duration of contracts between oil companies and gasoline stations. However, the OFT explained that the average duration of contracts in the UK does not exceed three years and that the driving competitive force in the market is the entry and growth of gasoline stations in the supermarkets. This competitive force emerged in Argentina with the French supermarket chain Carrefour but, although it was initially successful²², its strength soon diminished.

In line with the international experience, the SDCyC recommended to limit the duration of contracts to a maximum of five years. Nevertheless it introduced an important variant with respect to the European Commission's resolution. Recognizing that Argentina has higher costs of capital and that the objective of the recommendations is to incentive the entry of a new competitor or the growth of a small incumbent, the SDCyC explicitly differentiated between new gasoline stations and those stations already in operation. For the new stations, the recommendations suggested a maximum contract duration of eight years, allowing more time to amortize specific investments.

The second recommendation suggested the adoption of a limit to vertical integration. What would be the expected reaction of an incumbent oil company to a five year limit on contract duration, provided that the average duration of its portfolio of contracts exceeds eleven years?. Shorter contracts mean that the control of the network of gasoline stations operating under an oil company's brand will be more difficult. Gasoline stations' owners can look for better contracts more often and potential entrants have a larger pool of stations to choose from. Thus, the expected reaction of an oil company that wants to keep an effective control of its network will be to vertically integrate, buying gasoline stations that operate under its brand. In other words, it will attempt to convert some of the DODO gasoline stations to COCO. Anticipating this effect, the SDCyC

²² The entry of Carrefour, using the EG3 brand, triggered local price wars between the major incumbents. After some time of low prices, Carrefour increased prices and they remain slightly lower than the prices charged by the major incumbents.

recommended a forty percent limit to the quantity of company owned (COCO and CODO) gasoline stations that can operate under each brand.

7. Advocacy and competition in the Argentine gasoline market: policy evaluation.

In 2000 the SDCyC's policy recommendations were legally implemented by a Presidential Decree²³. After almost three years, an empirical evaluation is difficult to make due to the deep economic recession that has affected the Argentine economy since 1998. Nevertheless we can evaluate the positive and negative aspects of the design of the policy recommendations and the impact they are likely to have on the Argentine gasoline market (Table 2).

By all means, the limit imposed on the duration of contracts is a pro-competitive policy. It increments the liquidity of the gasoline stations contract market, making the gasoline market more contestable. Before the adoption of this policy, and given the extension in the average duration of contracts signed by the incumbent oil companies, a potential entrant had to build new gasoline stations to set up a competitive distribution network. Thanks to the limit imposed on the duration of contracts and the consequent higher availability of contracts every year, an entrant has more options to set up its network because it can "steal" gasoline stations from the incumbents.

Paradoxically, one of the most important positive characteristics of the policy recommendations turns out to be one of their main drawbacks as well. The SDCyC emphasized the need to respect property rights and that is why the five year limit on the duration of contracts applies only to the expiring contracts and not to those in force. Argentina is a country that had many events of flagrant violation of property rights. Therefore, the efforts done by the SDCyC to design policies to increase competition keeping as a main premise the need to respect property rights is, by itself, a characteristic that should be recognized. However, the implication of applying the limit exclusively to the expiring contracts makes the positive effects very difficult to observe in the short run. Given the actual duration of contracts (that on average exceeds eleven years), it will take some years for the whole stock of contracts to expire once every five years. In other

²³ Presidential Decree 1060/00.

words, the liquidity of the gasoline station contracts is not expected to increase for some years, possible delaying the decision to enter of a potential entrant.

Table 2: Evaluation of policy recommendations	
POSITIVE	NEGATIVE
<i>Pro-competitive</i> : limit on the duration of contracts reduces a barrier to entry	<i>Unlikely short term impact on competition and prices</i> : until all contracts start to expire every five years the access to the incumbent oil companies' distribution networks will be difficult. Can have a positive impact on competition only in the long run .
<i>Forward looking and respect of property rights</i> : the limit on the duration of contracts applies to the expiring contracts and not to those in effect.	<i>One sided policy</i> : the new policies will be effective only if the Argentine gasoline market grows. The probability of entry or growth of a small incumbent, is much higher if the market grows
<i>In line with the international experience</i> : followed an European Commission's ruling (2790/99) which imposed the same limit (5 years) to the duration of contracts.	
<i>No prohibition of vertical integration</i> : a non binding ceiling to vertical integration will allow the incumbent oil companies to counterweight any cartelization attempt of a group of gasoline stations.	

At first glance, the five year limit imposed on contracts may seem arbitrary. Why five years and not three or ten? Although these type of regulations have certain degree of arbitrariness, the SDCyC was wise enough to follow the precedent set by the European Commission in 1999. Equally important, the SDCyC allowed a longer contract duration for new gasoline stations (eight years) because it recognized that oil companies in Argentina usually provide credits to gasoline stations and that in this country the cost of capital is higher than in Europe.

The decision to impose a ceiling to vertical integration is controversial. The recent empirical literature that tried to measure the effects of vertical integration on final prices is contradictory. Vita (2000) analyzed the impact of divorce rules²⁴ in force in some states of the United States and concluded that these rules increase the final price of

²⁴ Gasoline "divorcement" statutes restrict –and in their most strict form, proscribe- the vertical integration of gasoline refiners and gasoline retailers.

gasoline, on average, 2.6 cents per gallon. However, a recent paper (Aydemir 2002) presents different results. When estimating the competitive effects of vertical integration of gasoline refineries and retailers in the U.S., Aydemir found that the foreclosure effect dominates the efficiency benefits, increasing wholesale prices of refined gasoline by 0.2 to 0.6 cents per gallon. Hastings (2002) examines the effects of changes in different vertical contract types on local retail prices. Using detailed station-level data in the Los Angeles and San Diego Metropolitan areas she found that a change in the market share of oil company-owned and dealer-owned gasoline stations does not have a significant impact on local market price. She suggests that this result argues against divorcement rules in gasoline markets.

Why did the SDCyC suggest a 40% limit to the quantity of company-owned gasoline stations that can operate under a brand, knowing that only 10% of the gasoline stations were company-owned in 2000? There are two possible explanations for this number. The first is that the SDCyC looked at the European statistics which show that 35% of the gasoline stations operate in a COCO arrangement. Given that the SDCyC recommended the same limit to the duration of contracts, it may have assumed that oil companies would follow the same strategy as in Europe, especially RepsolYPF, and so recommended a limit to vertical integration that resembles the European data for 1999. The second explanation relies on a political economy argument. The SDCyC faced two groups with conflicting interests²⁵. On one side, the oil companies that pressured to maintain with the status quo. On the other side, the associations of gasoline stations owners had been lobbying the Argentine Congress to approve a divorcement law for the gasoline market. It seems that the SDCyC wanted to accommodate the demands of these two groups and reduce the resistance to the implementation of its policy recommendations. To reach this objective, the SDCyC won the partial support of the association of gasoline station owners by limiting the duration of contracts and reduced the resistance of the oil companies by letting them embark in a process of vertical integration that would allow them to assure the control of a significant share of their distribution network.

²⁵ The recommendations faced some hard criticisms. The Senate, controlled by the opposition (peronist) party repealed the Presidential Decree 1060 but it is still in effect because the House of Representatives tacitly approved it.

Abstracting from the possible justifications the SDCyC had when it set a 40% limit to vertical integration, it is important to note that certain degree of vertical integration is desirable. If vertical integration is prohibited (divorcement rule) it is likely that groups of gasoline stations operate under implicit agreements because there will not be any market force that could counterweight their market power. If incumbent oil companies lose all capacity to influence retail prices, gasoline stations have incentives to increase margins, negatively affecting consumers' welfare.

All in all, the new rules proposed by the SDCyC have not been effective. This result is the logical consequence of the design of these rules, because they can only have an impact on competition if there is new entry or small incumbents decide to expand their networks. If the market does not grow, the presence of a new entrant or the expansion of a small incumbent are unlikely. The huge drop in gasoline demand caused by the economic crisis in Argentina will make the potential benefits of the new rules very difficult to observe.

8. Conclusion

The policies the Argentine Secretariat of Consumer Affairs and Defense of Competition advocated –implemented by a Presidential Decree in 2000- for the gasoline market were pro-competitive. The objective of these policies was to make the Argentine gasoline market more contestable by eliminating the role that long contracts between oil companies and gasoline stations play as a strategic barrier to entry.

An evaluation of the impact these policies have had is not an easy task. First, since the increase in liquidity in the gasoline stations contract market will not increase until most of the contracts expire, barriers to entry will remain high, possibly delaying entry decisions. Second, gasoline demand fell significantly since the Argentine economy entered a recession in 1998, which was aggravated by a major devaluation in 2002. These policies were designed to foster entry or growth of small incumbents, an unlikely event if the market does not grow. Third, multinational oil companies do not take entry decisions based exclusively on changes in entry conditions in one stage of the market; in general, they are integrated companies that look at a variety of related markets. For instance, Petrobras decided to enter the Argentine gasoline market in 2000 through mergers and

acquisitions. The new rules may have helped its decision but it is unlikely that they played a significant role given the importance of the related markets (extraction of crude oil and natural gas) relative to the size of the gasoline distribution business in Argentina.

Despite the lack of positive short run outcomes, the policies recommended by the SDCyC opened the possibility to intensify price competition in the Argentine gasoline market. One of the main merits of the recommendations is the respect of property rights. They have been an example of the advocacy role a competition institution can play, not only in a deregulated energy market but in other markets as well.

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